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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,806	09/08/2003	Hisakazu Okajima	815_011	1123
25191	7590	08/18/2006	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			PAIK, SANG YEOP	
			ART UNIT	PAPER NUMBER
			3742	
DATE MAILED: 08/18/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/657,806

Applicant(s)

OKAJIMA, HISAKAZU

Examiner

Sang Y. Paik

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9 and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9 and 11-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1, 15, 16, 17, 19 and 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al (US 6,242,719).

Kano shows a heater having a plate with a heater element forming a continuous wiring pattern with a plurality of flexures wherein the area between immediately radially adjacent corners of the flexture expands or varies between the flextures as the flextures circumvent along the terminal 5. The flextures are shown with the swollen portion which protrude toward the terminal with the rounded corners shown at the inner bending part of the swollen portion.

3. Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Fure et al (US 6,753,507).

Fure shows a ceramic heater with a hole formed therein, a resistance heater element having a continuous wiring patter including a plurality of flextures connecting a plurality of radially sequentially concentric arc portions, a plurality of curved avoidance portions having a radius of curvature that sequentially increases as the respective distance between the curved portion and the hole (64) increases (see Figure 3).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4, 5, 8, 9, 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fure et al (US 6,753,507) in view of Mizuno et al (US 5,766,363).

Fure shows the heater structure claimed including a ceramic plate made of aluminum nitride ceramics, a heater element having a continuous wiring pattern having a plurality of concentrically disposed elements further having a plurality of flexures with a plurality of folding parts. However, Fure does not show the folding parts with rounded corners with the greater first distance.

Mizuno shows a heating pattern including a plurality of flexures with a folding part with a linear connection part and the rounded corners at the inner bending portion to protrude outwardly where the distance between the radially adjacent wirings between the folding parts gradually becomes wider in the second region than in the first region where the distance between the wiring patterns remains substantially constant.

In view of Mizuno, it would have been obvious to one of ordinary skill in the art to adapt Fure with the claimed second distance between the radially adjacent wirings in the second region to further provide the efficiency of the heater as well as to improve the uniform heating distribution along the heating surface.

Art Unit: 3742

6. Claims 6, 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fure in view of Mizuno as applied to claims 2, 4, 5, 8, 9, 11, 13 and 14 above, and further in view of Yoshida et al (US 6,080,970).

Fure in view of Mizuno shows the heater structure claimed except providing the terminals in the center of the plate.

Yoshida shows a ceramic heater where the terminals of the heating element in the center of the plate, and Yoshida further shows that the heater element embedded in the ceramic plate. In view of Yoshida, it would have been obvious to one of ordinary skill in the art to adapt Fure, as modified by Mizuno, with the terminals provided in the center of the plate as an alternative arrangement to more conveniently provide the electrical terminal connections, and further adapt with embedded heater element in the aluminum nitride ceramic plate that can also provide a uniform heating distribution that can withstand a high temperature and corrosion.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (US 6,242,719) in view of Yoshida et al (US 6,080,970).

Kano shows the heater structure claimed except the heater element being embedded in the ceramic plate.

Yoshida shows a ceramic heater with a heating element embedded therein. In view of Yoshida, it would have been obvious to one of ordinary skill in the art to adapt Kano with the heating element embedded in the ceramic plate as an alternative arrangement that can also provide a good uniform heat distribution as well as to further protect the heating element from corrosion.

***Response to Arguments***

8. Applicant's arguments filed 6/8/06 have been fully considered but they are not persuasive.

With respect Kano, the applicant argues the recited area adjacent corners of the immediately radially adjacent flextures, as admitted by the examiner, is constant and does not vary as recited in the claim. Examiner disagrees the applicant's argument. The examiner has indicated in the Exhibit A of the office action mailed on 3/8/06 the clearly marked area where the area varies between the adjacent flextures. Examiner has shown in the Exhibit A that there is a constant gap or area before the flextures and how that area or gap is then becomes wider as the flextures are formed having the swollen portions with the rounded corners. The applicant's argument is thus deemed unpersuasive.

With respect to Fure, the applicant argues the "avoidance portions" are located on a single arc portion and not on radially sequential concentric arc portions of the wiring pattern. This argument is not deemed persuasive. As shown in Exhibit B, there are two concentric arc portions each having an avoidance portion. There is no limitation to confine the interpretation of the Fure arrangement as having the avoidance portions on a single arc portion as argued by the applicant.

With respect to Mizuno, the applicant argues Mizuno does not show the rounded corners that are connected by a straight connection portion and further argues there is no disclosure or suggestion that the shapes of the corners would improve anything. Figure 2 of Mizuno shows the rounded corners at the inner bent portion with a straight connection portion at the outer portion connected with the rounded corners. Mizuno teaches that its heating element 31 as a whole

Art Unit: 3742

provides a highly efficient heating, and while Mizuno does not explicitly state the advantages regarding the rounded corners that are illustrated in the drawing figures, it would have been obvious to one of ordinary skill in the art to modify the heating arrangement of Fure with that of the Mizuno including the rounded corners to improve the heating efficiency of the heater since such heating shape or arrangement is shown to improve the heating efficiency.

Also, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In light of the clearly illustrated drawing figures and the disclosed heating efficiency having such shapes and arrangement of the heating element, it is within the level of ordinary skill in the art modify the heating structure of Fure with that of Mizuno.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 3742

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sang Y Paik  
Primary Examiner  
Art Unit 3742

syp